



TOGETHER
for a sustainable future

OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.



TOGETHER
for a sustainable future

DISCLAIMER

This document has been produced without formal United Nations editing. The designations employed and the presentation of the material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations Industrial Development Organization (UNIDO) concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries, or its economic system or degree of development. Designations such as “developed”, “industrialized” and “developing” are intended for statistical convenience and do not necessarily express a judgment about the stage reached by a particular country or area in the development process. Mention of firm names or commercial products does not constitute an endorsement by UNIDO.

FAIR USE POLICY

Any part of this publication may be quoted and referenced for educational and research purposes without additional permission from UNIDO. However, those who make use of quoting and referencing this publication are requested to follow the Fair Use Policy of giving due credit to UNIDO.

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org

RESTRICTED

18724

DP/ID/SER.A/1415
21 November 1990
ORIGINAL: ENGLISH

THE CHINA GARMENT TECHNOLOGY DEVELOPMENT CENTRE

DP/CPR/85/055/11-01

CHINA

Technical report: Sixth visit of the Chief Technical Adviser*

Prepared for the Government of the People's Republic of China
by the United Nations Industrial Development Organization,
acting as executing agency for the United Nations Development Programme

Based on the work of Don A. Hague,
Chief Technical Adviser

Backstopping officer: J.P. Moll,
Agro-based Industries Branch

United Nations Industrial Development Organization
Vienna

* This document has not been edited.

TABLE OF CONTENTS

PAGE NUMBER

	ABBREVIATIONS
I	INTRODUCTION
II	RECOMMENDATIONS
III	TRAINING
	A. STUDY TOURS
	B. FELLOWSHIPS
	C. TRAINING COURSES
IV	EQUIPMENT
V	BUILDING
VI	LIAISON WITH INDUSTRY
VII	STAFFING
VIII	SUB-CONTRACT
IX	TRIPARTITE REVIEW MEETING
X	GENERAL
	A. PPER
	B. COMMUNICATIONS
	C. PLANNING

APPENDICES

1. List of persons met
2. Minutes of Tripartite Review Meeting
3. Schedule of activities for improving project output performance
4. Equipment list
5. Letter to CITI, Sri Lanka
6. Suggested outline for a demonstration of CTGIDC Capabilities
7. Staff list

ABBREVIATIONS

TRM	Tripartite Review Meeting
TPR	Tripartite Review
USA	United States of America
UNIDO	United Nations Industrial Development Organisation
UNDP	United Nations Development Programme
CICETE	China International Centre for Economic and Technical Exchanges
BL	Budget Line
UN	United Nations
NPD	National Project Director
CTA	Chief Technical Adviser
CIGIDC	China Textile Garment Technology Development Centre
MSTI	Marketing Service and Technical Information
PPER	Project Performance Evaluation Report
PESR	Pilot/Experimental Sewing Room
CAD	Computer Aided Design
DSD	Descriptive Sewing Data
CDSO	Computerised Descriptive Sewing Data
CITI	Clothing Industry Training Institute (Sri Lanka)
FIT	Fashion Institute of Technology (New York)
MTI	Ministry of Textile Industry
TV	Television
R and D	Research and Development
M	Male
F	Female
RMB ¥	Reninbi Yuan
\$	US Dollar

Exchange rates:

During the period of this mission, 16 October to 2 November 1990, the following exchange rate prevailed

US\$1 = RMB ¥ 4.71

I. INTRODUCTION

The mission began on Tuesday 16 October and ended on Saturday 3 November 1990.

The objectives of the mission were to:-

- take part in the Tripartite Review Meeting
- check progress of the project
- advise and assist the project management as necessary, but particularly with any requirements of the TRM.

In spite of the fact that the mission had been reduced from 4 man-weeks to just over 2 man-weeks, all objectives were met, including some activities set by the TRM.

II. RECOMMENDATIONS

1. Study Tour C should be carried out in early 1991.
2. A positive decision should be made immediately regarding the status of the proposed Study Tour to Hong Kong for 10 managers from the garment industry.
3. The remaining 3 technical Fellowships should go ahead as planned but they should all take place in Hong Kong.
4. Fellowship Number XVI for the Director should be reallocated to the Deputy NPD and should be deferred to early 1992.
5. Essential equipment listed in Appendix 4 should be purchased as a matter of urgency.
6. Equipment purchases should be reviewed at the next meeting in 1991.
7. A short Study Tour to CITI, Sri Lanka should be considered for 2 persons.
8. The PFAFF embroidery machine should be returned and either replaced with more suitable equipment or a refund obtained.

III. TRAINING

The pace of training in general has increased and the effect of returning Fellows to take up their appointments is contributing to the feeling that at last the Centre is beginning to move.

The non-return of two Fellows and one Study Tour participant has caused a certain amount of apprehension in the management about whether the existing and future Fellows will follow the example set by their colleagues. The problems of Study Tours and Fellowships have been discussed with the project management and courses of action have been agreed.

A. STUDY TOURS

Study Tour B has been completed, but this was marred by the defection of one participant, Ms Zhong Hui Xia in Paris.

Study Tour C, 4 persons visiting the USA and Japan for 4 weeks to study garment production and testing and the development of fabrics, is now proposed for early in 1991.

The much discussed Study Tour for Managers from industry to visit Hong Kong, has been reported upon in my last three mission reports. The management of the project are still very keen to organise this tour, as it would do much to promote interest in Centre activities within the industry. It is reported to me that so far, no response at all has been received from any of the controlling organisations - UNIDO, CICETE or UNDP, to indicate whether this proposed Study Tour should be organised or abandoned. It is strongly recommended that a decision, either for or against, should be made quickly. If it is decided for the Tour then the management can organise it, and if 'against', they can devote their attentions to other matters.

At the TRM, the UN team recommended that a short Study Tour for two persons should pay a short (2 or 3 day) visit to the Clothing Industry Training Institute, Sri Lanka, to study how this Institute functions and how it promotes its services to industry. A letter has been written to the Director of CITI. See Appendix 5.

B. FELLOWSHIPS

As mentioned above, the defection of two Fellows, one Study Tour participant and also two female employees visiting husbands abroad (for details see Appendix 7), has cast doubts over the selection of some employees for the remaining Fellowship places.

It is felt that those members of staff most likely to defect are the younger ones with few domestic ties. However these are the very group who have the necessary language training to be able to undertake the Fellowships.

At the TRM, in an attempt to find more funding for equipment, the project management proposed that the outstanding Fellowships should be abandoned and the money transferred to BL42. This request was certainly influenced by the fear of defection as well as the desire to increase equipment holdings. The request was denied by the UN representatives, largely on the grounds that as two Fellowships had already been lost, the loss of four more would result in a reduction in Fellowship training by almost 40%.

In my subsequent discussions with the NPD and Deputy NPD, it has been decided that the outstanding Fellowships must go ahead, but with some slight modification.

It is proposed that the three outstanding Fellowships for Cutting Preparation, Design, and Marketing Service and Technical Information, should be carried out at Hong Kong Polytechnic. The Polytechnic should be requested to provide such services as is within its scope of activities to satisfy each Fellowship requirement and seek placements into other companies and institutions in Hong Kong to give more depth to the training.

The advantages of using Hong Kong are:-

- a. The language difficulties are more easily overcome so, the choice of student becomes wider.
- b. The danger of defection is minimised.
- c. The cost may be slightly reduced.

The question of the Director's Fellowship was raised. Mr Pan Fan Ping, who was originally designated for this Fellowship (after the demise of Shen Yan), has decided that this should now be transferred to Mr Cheng Xiao Ming. His decision is based on the following:-

- a. Mr Cheng has no language problem.
 - b. He has been associated with the project from the beginning and should receive training to give him a wider technical and managerial perspective.
 - c. He is young and so will still have many years to be able to contribute to the Centre.
- NB. Mr Pan Fan Ping is close to retirement.

The problem would be that if Cheng Xiao Ming were to take up this Fellowship in 1991, he would be absent in what is going to be a crucial year in the development of the Centre and his absence could be critical to ensuring good liaison is maintained particularly with Vienna.

I agree with Mr Pan's logic and endorse his nomination and also I would request that this one Fellowship be deferred until after the move into the new building, i.e. the end of 1991 at the earliest, or preferably the beginning of 1992.

C. TRAINING COURSES

The training courses which have been carried out so far have been mainly run by the foreign experts provided under the sub-contract. The TRM compared what had been run by the Centre staff with the training activities required by the Project Document and found that there was a considerable shortfall.

In addition, the proposed list of courses to be offered in the latter part of 1990 and the whole of 1991, a total of only 15 courses, was inadequate considering the size of the organisation and the size of the industry it has been set up to serve.

The Training Department has only officially been established very recently, and so the preparation of a realistic training programme is very much a "first experience".

As part of the overall task, set by the TRM, to draw up a schedule of activities to improve the performance of project outputs, the Training Programme has been revised and increased to 30 courses. This is still a modest target, but it could result in the training of approximately 400 persons in 1991, and make a significant contribution to the Centre's income.

In addition to the Training Programme, the Head of Training, Mr Yu Jie, has been requested to draw up Check Lists for each course covering equipment, materials and facilities required. This is an attempt to overcome the existing chaotic system which has tended to spoil the start of almost every training course run - no equipment, no handouts (or incorrect handouts), not enough chairs/tables, and even no electricity for lighting!

Details of the Training Plan are in Appendix 3.

IV. EQUIPMENT

With the exception of two items still held in Customs in Shanghai, all ordered equipment has been delivered. The value of this equipment is calculated at \$575,181 which makes up 44% of the total Project Budget, and is approximately \$27,000 over BL49-99 in the latest Budget Report.

In spite of this, on my arrival I was presented with another list of requested equipment by the project management. When I had reviewed the list I calculated the latest request to be well in excess of \$60,000.

As mentioned earlier, at the TRM the management wished to "trade-in" Fellowships to enable the purchase of additional equipment. This was not accepted by the UN representatives and the meeting requested that the CTA should carry out an urgent review of the existing equipment and make recommendations as to what would be immediately essential to improve the performance of the Centre.

This review was carried out and it was decided, in conjunction with the project management, that the Blind Stitch machine specified in the Project Document (and not yet supplied), a series of International/British Standards, and an additional project vehicle should be recommended for immediate purchasing. These findings were faxed straight away to UNDP Beijing so that they could be included in the latest Project Budget Revision to be prepared by Mme Zhang Xi Wei.

It was suggested that, if more budget resources are available during 1991, then great benefits could be obtained from additional items of equipment.

I have arranged all equipment into lists for Present, Essential and Desirable (if funds are available) items. These are contained in Appendix 4.

During the review of equipment I came across some items held by the Textile Testing Laboratory, such as a Burst Strength Tester, which had been requested by the Garment Testing Laboratory. When I pointed out that duplication was not necessary, I was informed that if the Garment Testing Laboratory wished to use any equipment held by the Textile Testing Laboratory, then a payment would have to be made.

It was pointed out that these two entities should be one as it is stated in the Project Document.

For the record, the Project Document Part II D.e. records the output as "A Central Testing Laboratory" and goes on to state:-

"The Laboratory is currently equipped with an almost full range of textile testing equipment which will be completed by other items listed in Appendix 3".

The inference being that the existing Laboratory would receive additional equipment to complete its range and so be capable of carrying out tests on garments as well as textiles, and become the Central Testing Laboratory.

Instead, a separate Garment Testing Laboratory has been created which is currently housed in its own temporary accommodation a considerable distance away from both the CTGIDC and the Textile Testing Laboratory (which is housed at 24 Chang Ming Si Lane - the postal address of CTGIDC).

The intention is that in the new building, the two laboratories will occupy separate floors. I have suggested that they should occupy the same floor and it is my recommendation that they should be combined when occupation of the new building takes place. This would then satisfy the agreed output requirement of the Project Document.

Since the PESR has been re-established, a problem has come to light regarding Cutting Equipment. It is impossible to use the German End-of-Lay cutter on the same cutting table as the American Servo-cutting machine.

The reason for this is that both items use a rail system (in different ways). The Eastman Bob-o-Link Servo-cutter can be removed from the table, but it has to be lifted off, and it is very heavy. In normal usage, the machine would be "parked" at the end of the cutting table. This cannot be achieved because the End-of-Lay cutter cannot be removed from its own set of rails. The American Eastman Falcon system would have been compatible because the "distant" end of the system is simply clamped to the table and could easily be disengaged to allow the Servo-Cutter to run from its "parking place" to a cutting position.

The PFAFF automatic embroidery machine continues to be a problem because the programmes cannot be changed, and the present programmes are unsuitable. I strongly recommend that this machine is returned to PFAFF and either replaced with a more usable machine, or a refund obtained and put back on to BL 42 to allow a more suitable purchase to be made.

V. BUILDING

The new building is rising rapidly, and by the middle of October, the tenth floor was completed. Floors are being added at the rate of three per month, and so it is expected that all sixteen floors will be completed by December 1990.

If the fitting out and finishing of the building is undertaken at the same rate, then there is every reason to believe an occupation date of September/October 1991 will be achieved.

VI. LIAISON WITH INDUSTRY

Once again the TRM found that the effort of "selling" the Centre to industry was falling short of expectations. Little seems to have been done since the same matter was reported at length in my last mission report.

In the Schedule of Activities (Appendix 3) positive actions are recommended to each department in order to promote the activities of the department and the Centre as a whole.

The MSTI Unit has agreed to improve the manner in which Centre capabilities are presented and also to publish interviews with prominent people associated with the industry. A "trial" interview was carried out on the CTA and will be published in a forthcoming issue of the Bulletin.

The UNIDO Country Director, Mr Crowston, requested that I should "draw up a proposal" to include representatives from industry in the affairs of CTGIDC. This proposal was written into the Project Document, Part II Section H and it is stated that "this proposal is being given serious consideration by the Implementing Agency". The Project Document was written exactly five years ago and so far there is no representation from the industry on the "Leading Board".

The matter has been discussed with the NPD who informed me that the Leading Board is made up of representatives of Government organisations, and that the managers from the garment industry have less interest in the Centre, and are probably unwilling to become involved.

It was suggested that if the Centre promoted its activities better and captured the interest of the managers from industry, then maybe one or two may wish to become more involved. Mr Pan agreed and because it is such an important subject, he would take the matter up with the Light Industrial Bureau and the Ministry of Textile Industry, to try to find a way of including industry representatives on the Leading Board.

As an aid to promoting the Centre, it has been suggested that instead of meetings for managers, there should be a Demonstration of Project Activities. This idea has been discussed with Pan Fan Ping and Cheng Xiao Ming who agree that it would be a better method of promoting CTGIDC capabilities. Quite a lot of preparation is required, so it was not possible to organise a demonstration during my mission. The suggested outline for a half-day Demonstration is attached as Appendix 6.

VII. STAFFING

There have been some changes in staff duties since the last report but this is only as a result of returning Fellows taking up jobs to match their qualifications and also the creation of new departments. A full staff list is at Appendix 7.

There seems to be a little more energy being applied by most of the staff, and this I think can be attributed to returning Fellows applying themselves and providing some direction for their colleagues.

It will be interesting to see how the staff respond to the Schedule of Activities which should provide them with a practical means to demonstrate their abilities and their enthusiasm.

VII. SUBCONTRACT

The sub-contract will be completed on 14 December 1990. The last expert, Mr A Davies is currently with the project and has a programme of courses covering Pattern Construction and Product Development and Styling already under way. Mr Davies started his mission of three man-months on 22 September 1990. This was at the request of the project management. Mr Davies will submit his own mission report on completion of the assignment and the Contractors Terminal Report will also be submitted in December 1990.

IX. TRIPARTITE REVIEW MEETING

This meeting was held on 22 and 23 October 1990. The Minutes of the meeting are at Appendix 2 and several requests from the meeting have been reported elsewhere in this report.

X. GENERAL

A. PPER

As promised in my last report, I drafted such parts of the PPER as I was able without access to detailed information and sent the draft both to Vienna and Hangzhou in early June. I was a little disappointed to find that the submitted version of the PPER had been changed to reflect a very different view of the project.

B. COMMUNICATIONS

Little has been needed to be communicated during the last six months and messages have usually been timely. I hope that this is the start of a general improvement in inter-organisational communication which would make it unnecessary to repeat the criticism recorded in my last report.

C. PLANNING

There is now a central planning department within CTGIDC whose role it is to plan projects and activities. I have had a meeting with the two members of this department and we have agreed on some actions to try to improve the effectiveness of the Centre staff and facilities. These actions are in Appendix 3.

The planning and organising of training courses still remains somewhat chaotic, but with some actions agreed with the training department, this situation should improve.

D. CONCLUSION

There are still many outstanding problems which will keep the management and staff of the CTGIDC busy for the next few months. Hopefully these have been itemised in the Schedule of Activities and so can be monitored at the next Review Meeting which could be in early April.

My thanks to all friends and colleagues who made this mission possible and with whose assistance I was able to complete the tasks allotted by the TRM.

A list of persons met is at Appendix 1.

LIST OF PERSONS MET

UNDP Beijing	Barry Crowston, Country Director UNIDO
"	Zhang Xi Wei, Programme Officer
UNIDO, Vienna	Backstopping Officer
CICETE, Beijing	Wei Pingde, Programme Officer
Zhejiang Light Industrial Bureau	Zhao Wan Xing, Deputy Director
"	Dai Da Ming, Director
"	Li Lifeng, Head of Technology Department
"	Fang Zhen, Engineer
Foreign Economic Relations & Trade Bureau, Zhejiang Province	Han Jie, Programme Official
CTGIDC	Pan Fan Ping, national Project Director
"	Wu Zai Fu, Director
"	Cheng Xiao Ming, Dep Dir & Dir NPD
"	Zhang Renmei, Dep. Director
"	Han Li Cheng, Head of Administration
"	Yu Mei Ju, Head of Planning Dept.
"	Sheng Guo Xian, Dep. Head of Planning
"	Geng Wen Mei, Head of Testing Lab.
"	Yu Jie, Head of Training Dept.
"	Tang Jie Fang, Head of Garment Dept.
"	Shun Hao Dong, Head of PESR
"	Wong Xin Fa, Head of MSTI
"	Du Jian Hua, Head of Product Dev. Dept.
"	Lou Feiyu, Equipment Assistant
"	Zhou Ming, Secretary

MINUTES OF TRIPARTITE REVIEW MEETING
DP/CPR/85/055
22 AND 23 OCTOBER 1990 - HANGZHOU

The meeting was attended by the following persons:-

UNDP, Beijing	Mr Barry Crowston, UNIDO Country Director
	Mme Zhang Xi Wei, Programme Officer
	Backstopping Officer
UNIDO, Vienna	Mme Wei Pingde, Programme Officer
CICETE, Beijing	Mr Fang Zhen, Engineer
Zhejiang Light Industrial Bureau	
Foreign Economic Relations & Trade Bureau, Zhejiang Province	Mr Han Gie, Programme Official
CTGIDC	Mr Pan Fan Ping, national Project Director
	Mr Wu Zai Fu, Director
	Mr Cheng Xiao Ming, Dep. Dir. Dep NPD
	Mme Zhang Renmei, Dep. Director
	Mr Wu Wan Miao, Technologist
	Mr D A Hague, C.T.A.

No agenda had been prepared for the meeting and a short meeting of UNDP/UNIDO/CICETE staff took place prior to the main meeting to agree on a format.

Mme Wei took the chair and asked Mr Cheng Xiaoming to introduce the participants.

Apologies were accepted for the absence of Pan Fan Ping on the first day.

All participants were introduced to the meeting.

Mr Crowston requested that for the first day, the progress of each of the six project outputs should be discussed, and conclusions and recommendations should be given on the second day. This was agreed.

A short video film showing the activities of the Centre was shown.

Cheng Xiaoming began with a review of the Design Studio (now referred to as Garment Department).

Mr Crowston pointed out that according to the PPER and the verbal report, the Design Studio did not appear to be meeting its objectives.

This was discussed.

Mr Hague suggested that there are two major problems which affect not only the Design Studio output, but all outputs. These problems are:-

1. Is the Centre a Regional or a National Centre?
2. There is insufficient promotion of Centre activities and a low level of acceptability by the industry.

It was pointed out that the Immediate Objective as stated in the Project Document, was to assist the regional industry in the area now referred to as Eastern China, and ultimately the national industry. Therefore the attempts to become a National organisation immediately tended to be at the expense of controlled improvement in the outputs to meet the Immediate Objective.

Cheng Xiaoming informed the meeting that it was difficult to serve only Eastern China when the government required the Centre to carry out national investigative projects. These points were discussed.

Mr Crowston asked if the Centre management felt that 10 companies were sufficient to give the right level of business.

Cheng Xiaoming replied that the true figure was greater than 10 because these companies controlled many factories each.

Mr Crowston expressed the view that even so, 10 companies were not enough and the Centre needed to consider a more realistic number.

Mr Hague suggested that 1,500 factory units should be the target client base. This was not enthusiastically received but the Centre management said that they would look into it and possibly increase their target to 30 "network" companies. The Backstopping Officer asked how many "garment model ranges" had been produced.

Cheng Xiaoming replied that at least 200 had been produced and this figure would be increased to 500 by the end of 1991.

The Backstopping Officer asked if these were complete with specifications and costings.

Cheng Xiaoming stated that some had been costed but not all.

The CAD/Cutting Preparation was discussed and the same problems were found.

Cheng Xiaoming stated that high technology attracts industry, but industry will not, or cannot, pay for high tech services - but "more and more are showing interest".

The government had given a project to the Centre to develop a "low cost CAD (lay-planning) system for "industry" and some factories intended to order this from the Centre.

Mr Hague remarked that as far as developing the use of the very expensive UN provided CAD system, this latest development was very much like "shooting oneself in the foot". To offer a cheaper alternative is deliberately creating redundancy for the LECTRA system.

Mr Crowston stressed that if anything was required to make the output more successful, then the management should request it.

Pilot/Experimental Sewing Room was presented and it was stated that this was being redesigned and this work was not yet completed.

Mr Crowston asked if this was an area where there is a shortage of experience. This was agreed but returning Fellows would strengthen the team and give greater experience.

Mr Hague asked if the Computerised Descriptive Sewing Data System was being used when samples were produced for industry.

Cheng Xiaoming suggested that industry was very suspicious of such a technique and so it was not used. Mr Hague replied that if only as an exercise to keep the staff up to date, it should be used on every garment produced.

Cheng Xiaoming reported on the activities of the Training Unit and presented a list of fifteen courses to be offered between October 1990 and the end of 1991. It was felt that this number was not sufficient. Mme Wei felt that to increase the number might be difficult because there was a staff of only 4 in the Training Unit.

Mr Hague pointed out that the work of the 4 staff of the Unit had always been intended to be to organise training, plus some course delivery, but that the main teaching effort would be drawn from the other departments. This was accepted.

Mr Hague said that it was his intention to spend some time with the Head of Training and produce a more realistic training programme.

Mr Crowston suggested that some "Familiarisation" or "Selling" courses for industry managers should be provided.

Cheng Xiaoming suggested that a 2 or 3 day seminar should be arranged.

Mr Hague suggested that a half day practical demonstration of Project Capabilities would be more appropriate.

The Testing Laboratory was presented and discussed. Mr Hague said that the Laboratory had always been considered to be performing satisfactorily because it was operational before the project began. Mr Crowston asked how much industry used the Laboratory.

Cheng Xiaoming replied that it is used extensively as it is registered by Government as a national certification authority.

The Marketing Service and Technical Information Unit was presented and discussed and the meeting found generally it was performing well. The first part of its capability, as stated in the Project Document, that is to coordinate order values, had been removed, leaving the only activity as disseminating information.

The Backstopping Officer suggested that maybe the Unit had lost sight of part of this activity, that was the collection and presentation of information from industry, this this could be easily rectified.

Cheng Xiaoming summarised his reports of the six outputs and went on to say that some have got out of step. Some are performing well and others not so well. The management would like to set targets for each department.

Mr Hague informed the meeting that the remainder of his mission would be spent assisting the Centre Management to draw up any necessary plans.

Mr Crowston thanked the meeting for the discussions and requested that the meeting reconvene on 23 October. Mme Wei expressed the view that the Project Management had done a lot of work but it was not yet finished. There was a need to discuss and decide what guidance could be given.

Mr Crowston said that he felt that he was unsure if all objectives could be achieved, and maybe there would be a need to amend some.

MEETING ADJOURNED

The meeting re-opened on Tuesday 23 October.

Mr Crowston suggested that the UN consensus on the status of the outputs should be presented, and if this view was agreed by the meeting, then it should be incorporated as the conclusions of the meeting.

The Backstopping Officer reviewed the outputs and informed the meeting of the UN team's thoughts. Some of the conclusions are applicable to all six outputs.

The three main difficulties are:-

1. The confusion on whether the Centre is Regional or National.
2. Industry involvement in Centre direction and the promotion of Centre activities.
3. Confusion between Government sponsored activities and Project Activities.

Regarding the six outputs:-

1. Design Studio

The important services should be:-

- a. the drawing up or checking of size tables
- b. liaison with foreign organisations to provide fashion trend information
- c. improve the garment labelling system.

These items should be concentrated on, with less effort being given to the development of new model ranges. However this latter should not be excluded.

2. Cutting Preparation Unit (CAD)
The feeling is that industry is reluctant to accept this service.

The problem should be addressed by a more aggressive selling/
promotion drive by whatever methods are possible.
The equipment must not be left idle.
3. Pilot/Experimental Sewing Room
Should continue to function as a "practising" unit to establish
methods of manufacturing garments. It should concentrate on the
making up of samples with appropriate methodologies, and also
the preparation of standard times for each garment (and each
operation). Use of the video system and CDS/D should be
included in this.
4. Testing Laboratory
The Laboratory should sell its services more actively and,
because it already has access to more clients through the
certification service, the opportunity should be taken to
promote other services of the Centre.
5. The Training Unit
Too few training courses have been planned for the capacity of
the Centre, and all staff should be included as potential trainers.
More courses are required and the CTA is requested to assist in
drawing up a more realistic programme to the end of 1991.
6. Marketing Service and Technical Information Unit
This unit functions quite well. It is felt that it could use its
publications to further promote the activities of the Centre.

The Backstopping Officer suggested that a Study Tour might be arranged to visit the Clothing Industry Training Institute (CITI) in Sri Lanka to see the success of promotion of a similar organisation. He also requested the C.T.A. to assist the Centre management in drawing up a proposal to include industry in Centre activities, and also to draw up an Action Plan to cover the requirements of the conclusions listed above.

The Backstopping Officer stated that the UN team felt that Project Activities should be confined to a regional level to allow concentration of effort, and also to make a clear separation of "government" activities and "project" activities.

Mr Crowston summarised by saying that the alarm created by the PPER had been somewhat overcome and he felt that the proposals given by the UN team would go a long way towards getting the project functioning at the correct level.

He again requested that the CTA should draw up:-

1. Work/Action Plan for each output.
2. Plan "sensitizing" meeting/demonstration
3. Re-align the training programme.

Mr Pan Fan Ping replied to the UN conclusions on behalf of the Project Management.

He agreed that whilst the project was planned to become a National Centre, it should start at regional level and then expand.

He felt that there would be many difficulties in promoting the Centre with an industry still based on tradition; however with improvements, eventually the Centre's work will be acceptable.

There was now more pressure on the Centre to serve industry to survive because there would be no government support from the Centre from next year.

The nationwide work carried out for government should improve the Centre's reputation. The work is intended to improve industry so there is no conflict with project intentions.

Every effort will be made to overcome the three major problems over the next year.

Mr Pan Fan Ping agreed with everything that had been proposed regarding the work of the six outputs. He said that he felt that a lot of effort had been given to producing new model ranges, and less effort had been given to training. This had been mainly carried out by foreign experts.

There will be increased effort to promote the CAD services.
He welcomed the proposed visit to CITI.

Mr Pan felt that there would be considerable improvements when the new building was completed.

Mr Wu Zai Fu spoke regarding the confusion between government work and project work. He felt that there had been some confusion but now that the problem had surfaced, he felt that future work could be put in perspective and prioritised so as not to conflict with project activities. He felt that the task of producing size tables would be very expensive and very difficult in the present situation.

He agreed with other suggestions for the six outputs; however he felt that the Laboratory was not well equipped and local equipment was not suitable and requested further support for provision of more equipment.

Mme Wei suggested that as Mr Wu felt that the production of size tables was too difficult, then should this item be excluded from the Project Document.

The Backstopping Officer felt that it should not, and that initially, a Pilot Study should be carried out locally.

Mr Hague pointed out that size tables do exist, but some are probably out of date and need checking. Hangzhou and the surrounding area could be the ideal spot to carry out a Pilot Study to check/improve the Size Tables.

Mr Pan Fan Ping stated that Size Tables for 1984 will be revised - within Hangzhou and Zhejiang. Mme Wei stated that some equipment had not been provided.

Mr Crowston stated that this should be included in the budget discussions.

Mme Wei stated that in a letter of 31 May 1990, the government had agreed to increase the budget by \$71,574 to cover foreign experts, but the equipment increased had not yet been approved.

There then followed a somewhat disorganised discussion in Chinese which cannot be recorded. Mr Pan Fan Ping suggested that in order to provide funds for the purchase of additional equipment, 3 of the outstanding Fellowships be cancelled and the funds transferred to BL 42.

Training of staff could be carried out by the Pattern and Design Expert next year.

He also felt that the CAD Expert should be removed and the funds transferred to BL 42. He would also like to cancel the in-depth evaluation which would also save money - possibly around \$75,000. If the proposed visit to Sri Lanka cost \$5,000 then \$70,000 could be available for equipment.

The Backstopping Officer agreed that from the Government and UNIDO point of view, the in-depth evaluation was not necessary but UNDP must be consulted before this decision is made.

He cautioned against cutting out training of Fellows in order to purchase equipment as this would not solve any problems - in fact he felt that Fellowships should be increased if possible to cover the gap left by non-returning Fellows.

Cheng Xiaoming stated that as the Fellowship programmes had been expanded in terms of man-months, and the foreign experts had also been extended, equipment should also be extended to keep the same proportion of the UN inputs. Some Fellowships could be cancelled.

Mr Crowston stated that after two days of discussion, the meeting should now be at a stage of focussing on what changes are needed to achieve outputs. There should be two major improvements:-

1. The need to focus more effort
2. The need to improve industry acceptance.

To reduce the training component of the project would not be acceptable. It would reduce expertise and therefore the ability to pass this expertise on to industry. Already, more than \$575,000 spent on equipment - 44% of the budget. Normally on any project, only 30% is expected to be spent on equipment. The Centre is well equipped and so to increase equipment spending is not acceptable to UNIDO.

Mme Wei replied by saying that in China, it is not easy for research institutions to get foreign exchange. Next year, there will be no government support so the Centre cannot buy foreign equipment. She went on to say that she felt an increase in the equipment budget was reasonable; "It is only testing equipment". From the CICETE position, the Budget Line should be changed.

Mr Crowston disagreed and pointed out that the proposal was outside the scope of the Project Document. Mme Wei felt that there must be an increase.

Cheng Xiao Ming restated the Centre management's position. Mr Hague pointed out that as three Fellows had already been lost, cutting another three Fellowships would reduce the number of foreign trained staff by six not three. This would drastically reduce the capability and the outputs would be unlikely to achieve success.

Mr Crowston expressed the view that this was not the appropriate time to discuss major project changes, and maybe when the project was producing six satisfactory outputs, the time would be more appropriate. Equipment is not a priority at this time.

The Backstopping Officer and Mr. Crowston suggested that the CTA be asked to review the present equipment held at the Centre in the light of what is essential to improve the outputs to satisfactory status. This was agreed by all.

Mr Crowston informed the meeting that if an in-depth evaluation were cancelled and then the equipment budget were to be increased, this would immediately incur suspicion and UNDP would insist upon an evaluation.

Mme Wei summarised the discussion.

Mr Crowston restated the position that UNIDO was not against the Centre having additional equipment, but the first priority must be the achievement of all project objectives.

Mme Wei gave her thanks to all and closed the meeting.

APPENDIX 3

SCHEDULE OF ACTIVITIES

FOR IMPROVING PROJECT OUTPUT PERFORMANCE

Following the conclusions of the Tripartite Review Meeting held on 22 and 23 October 1990, meetings have been held with the management of CTGIDC and with the heads of the departments which make up the Project Outputs.

The objective of these meetings has been to formulate lists of activities to be undertaken during the latter part of 1990 and 1991. Ideas have been exchanged, refined, modified or expanded, and the result is a list of activities all of which are aimed at complying with the requirement of the TRM and in particular at promoting and expanding the activities of the CTGIDC.

All activities have been agreed with the heads of departments and with the Centre management.

GARMENT DEPARTMENT

Ms Tang Jie Fang

What is now called the Garment Department is made up of the Design Studio and the Cutting Preparation outputs. Ms Tang therefore has charge of two of the outputs which are felt to require additional effort to become satisfactory. The following activities have been agreed as priorities:-

1. Conduct a Pilot Study in Hangzhou and Zhejiang Province to check if the existing (1984-85) national size tables are still applicable. It is suggested that Ms Tang should seek guidance from Mr Tony Davies whilst he is still with the project.

If the investigation shows significant changes, then there could be a strong case for a proposal to government for a major revision of the Size Tables which could result in a large piece of paid work.

2. Improve the liaison with overseas fashion organisations in order to gain more information which can be disseminated to industry through model ranges and Centre publications. It is suggested that Ms Tang contacts all the fashion institutes which have hosted Centre students/ Study Tours, such as FIT, London College of Fashion, Hollings College, Jacob Kramer College, Hong Kong Polytechnic as well as institutes in France, Germany, Italy and Japan. Contact should be by letter, enclosing copies of the Centres publications, to try to establish a two-way exchange.
3. Improve garment labelling system by:-
 - checking the existing labelling systems for domestic products
 - comparing with international labelling standards
 - publishing recommendations in Centre's Bulletin and Magazine
 - liaise closely with Testing Laboratory to try to include a revised labelling system in certification requirements.
4. Promote the Centre's CAD system by whatever means available in order to increase its usage for the benefit of industry.
5. Attempt to improve the image of the Centre by ensuring that only high quality model samples are offered.

PRODUCT DEVELOPMENT

Mr Du Jian Hua

This department falls outside the scope of project outputs, but is included in this Plan in order to complete the picture. The department has already carried out a major piece of research work on the relationship between fabrics and interlinings.

The department intends the following for the end of 1990 and for 1991:-

1. Undertake a major programme to educate the industry to the correct usage of interlinings and therefore obtain an improvement in product quality and overall productivity. The industry needs to be aware of:-

- Selection of correct type of lining
- Correct methods of application - heat, pressure and time/speed
- Selection of most suitable equipment

It is the intention to hold seminars and courses and also to carry out direct consultancy with factories.

2. Follow-up courses/seminars/consultancy to monitor quality improvements and productivity.
3. Carry out suitability assessments of interlinings produced by major domestic manufacturers and render confidential reports. This should have the effect of improving the quality of materials available to the industry.
4. Develop a range of relevant sewing attachments which could be produced locally.
5. Promote a newly developed range of 14 lining fabrics in Poly/Rayon, Polyester, Poly/Nylon in various weights and constructions.
6. Promote other Centre activities whenever possible through industry contacts.

This department is constantly applying for new projects:-

- Government entrusted
- Industry entrusted

PILOT/EXPERIMENTAL SEWING ROOM

Mr Shun Hao Dong

The PESR has recently been re-organised in order to get the best use of the equipment. The department now occupies 3 rooms of the temporary accommodation

- one for cutting
- one laid out as a mini-production line
- one with specialised equipment

The following activities have been agreed as the priority to the end of 1991.

1. The development of the use of the Standard Time Measurement system, CSDS, and the application of the system for all models/samples produced in the Department.
2. The development of the use of the video equipment to gather examples of manufacturing methods from industry so that a DSD analysis can be carried out and improvements made and offered to industry.
3. The continuation of the development of the Centre's capability in methods improvements - applied to all models and samples, so that if a range is offered to industry, the best methodology can also be offered.
4. The strengthening of Product Quality Control through methods improvements.
5. The Improvement of Productivity within the industry by the application of all the above-mentioned activities.

TRAINING UNIT

Mr Yu Jie

Ms Shou Hong Yi

The TPR meeting expressed the feeling that in the past, the majority of the Training Courses had been run by the foreign experts and that the list of courses proposed for the remainder of 1990 and 1991 was insufficient to reflect the capacity of the Centre.

Following discussions with Mr Yu and Ms Shou, it was agreed to increase the training effort as follows:-

<u>COURSE</u>	<u>DURATION(DAYS)</u>	<u>NO. OF TRAINEES</u>	<u>FREQUENCY</u>
1. Operator Training (In-Plant)	15	10	3
2. Basic Patterns	10	12 (up to 20)	3
3. Advanced Patterns & Styling	10	2	3
4. Fashion Design	48	up to 20	2
(NB. It was suggested that this should be modular with Basic patterns as one module)			
5. Instructors	10	12	4
6. Quality Control	6	12	5
7. Basic Production Engineering	18	12	3
8. Management Seminars	3	20	4
9. Personnel Management	3	10	3
TOTALS	<u>346</u>	<u>396</u>	<u>30</u>

Notes

1. It was established that a ¥8 per student day (average), the above plan would yield over ¥39,000 of income.
2. The Training Programme will be produced as a Spread Sheet showing duration and timing of courses plus staff allocation.
3. The Training Department will produce Check Lists for each course giving all equipment, materials and facilities required.

TESTING LABORATORY
Ms Geng Weu Mei

Due to the acute accommodation problem, the Garment Testing Section of the planned Central Laboratory is physically separated from the Textile Testing Laboratory. This does cause some slight problems.

However, the following actions have been agreed to extend the range of services offered:-

1. Establish all the equipment and ensure that operating procedures are properly formulated.
2. Establish staff duties and responsibilities.
3. Develop more tests for a wider range of garments in addition to the tests already established for:-
Jackets, shirts, blouses, skirts, woollens and leather garments.
1991 should see tests for:- padded/quilted garments and knitted goods.
4. Apply to become accredited as a recognised garment testing and certification service.
5. Start monitoring quality within the industry.
6. Assist in matters of dispute.
7. Increase the collection and distribution of international standards.
8. Assist factories in preparing of testing/inspection procedures for incoming fabrics/materials.
9. Promote the other activities of the Centre whenever and wherever appropriate, through factory contacts.

MARKETING SERVICE AND TECHNICAL INFORMATION UNIT

Mr Wong Xin Fa

The TPR Meeting felt that this output has always been satisfactory. However, because its publications are widely distributed and accepted by industry, some additional efforts could be made to further promote the activities of the Centre.

The following actions were agreed:-

1. Establish liaison links with the Textile and Garment Industries and also the Retail Stores. This should provide linkages and dialogue and so help the industries to improve with the help of the Centre.
2. Improve the Bulletin (fortnightly newsheet), by:-
 - a. improving the image and printing quality
 - b. adding to the contents new features and also a section to allow industry to feed-back comment
 - c. publish interviews with prominent people within or associated with the industry such as:-
 - Minister of Textiles or a Senior MTI official
 - Head of Light Industry Bureau of Zhejiang Province
 - Factory Directors
 - Retail Store Directors
 - Foreign representatives of Joint Venture partnerships
 - Foreign buyers or Buyers Technical consultants
 - d. publish articles written by foreign authors
 - e. Highlight features on Centre activities - particularly CAD.
3. Liaise with local TV stations and newspapers to get the Centre activities reported.

PLANNING DEPARTMENT

Ms Yu Mei Ju and Mr Sheng Guo Xian

The Planning Department was very recently established and only has the two staff named above. It was, therefore, a convenient time to hold discussions to establish a framework whereby the Department could assist in the overall planning and control of Centre activities to achieve the objectives of the Project.

The following actions were agreed:-

1. To quickly develop an internal communication system to gather information from other departments to allow for good planning and coordination of activities.
2. Develop a Central wall-mounted Planning Chart to display all activities, staffing and facilities.
3. To research industry requirements (through information collected by other departments in the course of their normal work) and make proposals for plans/programmes to assist Government/Industry in development programmes, equipment utilisation etc, to achieve the long-term plans for industrial development.
4. To continue to apply effort towards getting enough R & D projects from Government to maintain a steady income.
N.B. There must be a balance to allow project activities to take place as planned/required.

EQUIPMENT LIST

The list of UNIDO provided equipment has changed many times since the Project Document was written. This list is an attempt to rationalise the present equipment and possible future needs or desires.

A. List of equipment held by the Centre or in transit:-

	USS
1. Toyota Cressida Station Wagon	14,024
2. Stopwatches	2,642
3. Photocopier	23,892
4. Sewing Machine Attachments	9,757
5. Training Equipment (Video, OHP, Whiteboard etc)	9,690
6. End-of-Lay Cutter)	5,147
7. Cloth Drill)	
8. Tog Rating Tester	15,071
9. Lockstitch Profiling and Embroidery Machine	29,722
10. LECTRA 303+ CAD System	214,762
11. Sleeve easing machine	7,959
12. Standard Time Data System (CSDS)	10,330
13. Management Control Software	18,000
14. Hydrostatic Head Tester	10,139
15. Air Permeability Tester	12,420
16. Water Repellency Tester	11,948
17. Flammability Tester	18,505
18. LECTRA 351 CAD System	99,953
19. Mini UPS CAD software	9,000
20. Fusing Unit	26,477
21. Steam Pressing Boards with Irons	4,728
22. Buttonhole machines)	15,235
23. Embroidery machine)	
24. Replacement lamps for vehicle	154
TOTAL	<u>575,181</u>

B. Additional equipment necessary to improve project outputs to a satisfactory level of performance:-

- | | |
|---|-------------|
| | <u>US\$</u> |
| 1. Blind stitch machine (listed in Prodoc and not yet supplied) | 3,500 |
| 2. BSI/ISO Standards as follows:- | 1,500 |

<u>BS No.</u>	<u>Title/Abbreviated Title/Subject</u>
6189	Glossary of Terms
950 Part 1	Artificial daylight for colour matching
1006	Testing for colour fastness
2544	Determination of thickness of textile fabric
2819	Measuring distortion
3086	Measuring crease recovery angles
3320	Determination of seam slippage
3321	Measuring equivalent pore size of fabrics
3356	Determination of stiffness of cloth
4294	Testing stretch and recovery properties
4745	Determination of thermal resistance
4768	Determination of burst strength
4797	Determination of resistance to insect pests
5058	Assessment of fabric drape
5441	Testing knitted fabrics
5636	Determination of air permeability
5690	Determination of abrasion resistance
5811	Determination of resistance to pilling
2823	Hydrostatic head test
3449	Static immersion test
3702	Spray test
4032	Determination of certain additives in cellulose fibres
4323	Determination of dimensional change induced by steam
4554	Testing wettability of fabrics
4569	Specification for surface flash - pile fabrics
4658	Preparation of Laboratory test samples
4736	Determining dimensional changes - cold water immersion
4923	Schedule of domestic washing and drying procedures
4931	preparation/marketing of samples - dimensional change tests
4961 Part 1	Determining dimensional stability to dry cleaning
5066	Test fabrics in an artificial shower
5377	Specification of laundering effects
6085	Determination of resistance to microbiological deterioration
1771 Parts 1 & 2	Specification for outdoor uniforms
3838	Specifications for blazer fabrics
4560	Specifications for uniform linings

4973		Interlinings
		Part 1 non-woven sew-in
		Part 2 non-woven fusible
		Part 3 woven and knitted fusible
		Part 4 specifications for woven sew-in
5742		Specification for textile labels - wash/dry clean
2747		Textile care labelling code
5815		Specification for cotton and blended sheetings and towels
2732		Specifications for tickings
3084		Specification for slide fastners
3102		Brass eyelets and washers for general purpose
3866		Specifications for holes and shanks for buttons
3870	Parts 1 & 2	Stitches and seams
5919		Specification for childrens anoraks
6185		Specification for size designation of menswear
6308		Specification for men's uniforms
953		Testing of safety and protective footwear
1801		Cotton tagged boot and shoe laces
1870		Safety footwear
		Part 1 Specifications for safety footwear
		Part 2 Lined rubber safety boots
		Part 3 PVC moulded safety footwear
2723		Fireman's leather boots
4004		Specification for nylon boot and shoe laces
4972		Specification for women's protective footwear
4981	Parts 1 & 2	System of shoe sizing and marking 'mondopoint'.

3. Additional vehicle (small/medium personnel carrier) 25,000

C. If any Budget Line surpluses are going to be transferred to BL 42 in the later stages of the Project, then the following list should be considered as desirable purchases. These items are listed in the order in which they should be considered so that project outputs can be further improved:-

	<u>Target Price US\$</u>
1. Facsimile (Fax) equipment	3,200
2. High volume photocopier	20,000
3. Desk Top Publishing System (Complete with PC and laser printer)	14,000
4. Domestic Automatic Washing Machine incorporating a variety of programmes and Spin Dryer	1,500
5. Technical and Training videos on garment-related subjects	1,500

D. If further funds became available, the following list of equipment could be considered:-

	<u>Target Price US\$</u>
1. Benchmark Lab. Workstation/Colour matching	3,000
2. Thermofix Sublimation/Stability Tester	10,500
3. WIRA Steaming Cylinder	5,000
4. Zip tester	8,000
5. FAST Tailorability Tester	NK
6. L & M Sewability Tester	NK
7. Hand-held Electronic Yarn Tension Meter	2,300
8. Testometric Tensile Tester (with Amstrad Computer & Software)	25,000
9. Lockstitch Flatbed S/Machine with fancy stitch control	1,500
10. Knitting Machines with Linking - 5 needles per inch) 9 needles per inch)	8,000
11. Baginess Tester for Knitted Fabrics	3,000

NB. This last list could be added to ad infinitum.

R. U. Kuruppu
Director,
Clothing Industry Training Institute,
Kandawella No 2 Estate,
General Sir John Kotalawella Road,
Ratmalana,
Sri Lanka.

1 November 1990

Dear Rohan,

I am sure that you are aware that I have been working with the China Textile Garment Technology Development Centre for some time now.

During my Present mission to China, it was proposed at a review meeting that we should consider sending one or two members of the staff to visit CITI. The purpose of the visit would be to discuss with you how you have built the Institute up from nothing to a highly successful and respected organisation in such a short time.

Obviously such a visit would require an invitation from you to the management of this Centre. I hope that this will be forthcoming so that the necessary arrangements can be commenced.

In the mean-time, if you could send some copies of "Clothing" to my counterpart here, it would help to reinforce my description of your Institute.

It is always a great pleasure to me to receive my copy of Clothing - I remember the problems you and I had with the very first issue.

I hope you will be able to assist in these matters, and I request that you address your correspondence to:-

Cheng Xiao Ming,
Deputy Director & Deputy National Project Director,
China Textile Garment Technology Development Centre,
24 Chang Ming Si Lane,
Hangzhou 310009,
People's Republic of China.

Many thanks, and my regards to you and all the staff. Maybe I will be able to arrange a visit for myself one day.

Yours Sincerely

Chief Technical Adviser, UNIDO.

APPENDIX 6

SUGGESTED OUTLINE FOR A DEMONSTRATION
OF CTGDC CAPABILITIES

Welcome and Introduction - Wu Zai Fu, Director
Explanation of Project - Pan Fan Ping, N.P.D.

Visit practical Demonstrations:-

1. DESIGN Demonstration of Pattern Drafting from a Centre design.
2. CUTTING ROOM Demonstration of End-of-Lay Cutter
Demonstration of Servo-Cutter (if possible)
3. PILOT/EXPERIMENTAL SEWING ROOM See machinery layout
4. SAMPLE ROOM Demonstration of correct use of Programmable machines
5. MEETING ROOM Observe DSD analysis from video.
See computer response to DSD input (with print-out)
6. COMPUTER ROOM Demonstration of Lectra 303+
Demonstration of Lectra 351
Demonstration of Management Software

Summary and questions.

APPENDIX 7

CHINA TEXTILE GARMENT TECHNOLOGY DEVELOPMENT CENTRE
STAFF LIST - OCTOBER 1990

<u>DEPARTMENT</u>	<u>NAME</u>	<u>SEX</u>	<u>LANGUAGE</u>
National Project Director	Pan Fan Ping	M	
Director	Wu Zai Fu	M	
Dep.Dir & Dep. NPD	Cheng Xiao Ming	M	English
Deputy Director	Zhang Ren Mei	F	
Chief of Admin	Han Li Cheng	M	
Administration	Lou Fei Yu	M	English
"	Pan Gen Quan	M	
"	Zhang Jing Ling	F	
"	Qiao Rui Qing	M	
"	Shi Mei Ju	F	
"	Zhou Ming	F	English/German
"	Fan Zi Qiang	M	
"	Cheng Xiao Yan	F	
"	Gao Su Zhi	F	
"	Ding Bai He		
Building Construction	Sheng Da Hai	M	
"	Cheng Tian Bao	M	
Trading Business	Zhie Wei Min	M	
"	Ni Yao Ming	M	
"	Gao Hong Wei	M	
"	Xie Xue Hua	M	English
"	Cheng Jun Sheng	M	
Garment Department	Tang Jie Fang	F	English
"	Zhou Jian Jie	F	English
"	Sheng Wei Min	M	English
"	Zhu Li Pin	F	
"	Zhang Xin Lu	M	English
"	Huang Ying Fang	F	English
"	1. Li Jia	M	English
"	2. Pan Yan	F	English
"	Yu Hui	F	English
"	Xu Xun	M	Japanese
"	3. Zhong Hui Xia	F	
"	Hu Jun Jie	M	
"	Guan Juan	F	Japanese/English
"	Ding Wen Jun	M	English
"	Cheng Jing Buo	F	Japanese
"	Wang Rung	F	
Testing Laboratory	Geng Wen Mei	F	English
"	Wu Wan Miao	M	English
"	Lang Fu Ting	M	English
"	4. Ying Chun Hang	F	
"	Ca Yuan Yuan	F	Japanese
"	Dong Pin Fei	F	English

Product Development	Du Jian Hua	M	English
"	Yang Jin Xian	F	Russian
"	Yu Fu Chao	M	English
"	Weng Yuan Feng	F	English
"	Zhao Wan Ting	F	English
"	Li Zai Qin	F	
PESR	Shun Hao Dong	M	English
"	5. Xia Jian Gang	M	German
"	Zhen Hong Ming	F	
"	Sheng Jin Rong	M	
"	Tan Yong Hua	F	
"	Shen Gen Di	F	
"	Guo Qin	M	
Training	Yu Jie	M	English
"	Shou Hong Yi	F	English
MSTI	Wong Xin Fa	M	
"	Sheng Peng	F	
"	Lu Hui Min	F	English
"	Xu Li Nong	F	English
"	Cheng Chun Fen	F	English
"	Liang Hong Jun	M	English
"	Yu Hong Bin	F	English/Japanese
Planning Department	Yu Mei Ju	F	
"	Sheng Guo Xian	M	Japanese

NOTES

1. Lia Jia did not return from a Fellowship in UK (1990)
2. Pan Yan visited husband studying in Canada and did not return (1989)
3. Zhong Hui Xia left Study Tour in Paris and has not returned (1990)
4. Ying Chun Hang visited husband in USA and did not return (1990)
5. Xia Jian Gang did not return from Fellowship in Germany (1989)